

**Resilience, Social Capital, and the Local Food System:
A Look at the Local Food System in Muncie, Indiana**

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Chapter 1: Introduction and Problem Statement

The summer of 2016 brought prolonged rainfall and catastrophic flooding to the southern state of Louisiana, resulting in the loss of nearly 146,000 homes to high waters and more than \$8 billion of damage to the area. Seven people died and over 30,000 people required rescue. In 2005 the Cajun Navy formed in response to Hurricane Katrina and was responsible for rescuing 10,000 individuals (CBS 2015). The Cajun Navy's response during the 2005 Louisiana flooding was far more organized and seemingly more effective than some professionally trained rescue groups. The vigilante rescue group was able to coordinate boats within a day and began rescuing stranded individuals almost immediately. Social media was used to propagate information and collect evidence on possible locations of stranded families and their pets. The group of volunteer boaters was able to disperse into the affected areas while state and federal groups were still organizing rescuers and resources (Lohr & Bellware 2017).

Although this group displayed obvious heroism in its rescue efforts, there has been some difficulty discerning legend from truth in the case of the Cajun Navy. Stories of gallantry and community strength make for popular journalism and details can be stretched and lost. Despite some uncertainty, the community absolutely showed a strong response to the disaster and exercised its social infrastructure to clearly display the mechanisms that establish resilience within human settlements.

Planners can identify the presence of community resilience and identity within these stories of rescue and survival. Cajun Navy members expressed a sense of camaraderie and community identity: "This is what you start feeling — the heart and fiber

of Louisiana. People taking care of their loved ones. People taking care of strangers” (Lohr & Bellware 2017 page 1).

Where do these forces of community come from and how do inherent social structures both encourage and discourage phenomenon similar to that exhibited by the Cajun Navy? In some ways, the purpose and goals of the Cajun Navy are expressed in its name. This fleet of vessels captained by members of a community defined by the food, region, and history of the area of Louisiana that was devastated by flooding in 2005 acted as saviors to an area with similar identity and history. Cajuns rescuing Cajuns, the community stepped up to help itself. This represents a principle of community resilience as it relates to social capital; the reciprocity and trust that comes from shared experience, culture, and identity. This shared understanding creates the groundwork for relationships. There are many shared experiences that enable people to trust one another. Where people are from, what language they speak, what they believe in, and even what they eat contributes to how people relate. In an attempt to understand how identity affects the resilience of a community, the following research will focus on the ability of a social network to generate social capital, focusing in particular on how the local food system can be used as an effective generator of social capital.

This research seeks to review the principles of community resilience and examine how social capital can build resilience in communities. The Japanese Tsunami and Hurricane Katrina provide backdrop to the research and discussion of social capital. After establishing social capital as a means of creating resilience, the concept of local food systems and their relationship to social capital will be examined. Finally, using Muncie, Indiana as an example, the relationship between individuals and the local food systems will

be examined for indicators of social capital and resilience and suggestions will be made for strengthening this social network.

Japanese Tsunami

In 2011 a large earthquake off the shore of Japan caused a massive tsunami. The resulting damage was overwhelming. The Fukushima nuclear reactor breach caused widespread media panic, but damage from the wave itself caused massive damage throughout the country. Mortality rates varied drastically from region to region. One study found that there were strong positive links between the mortality rates and social capital (Aldrich 2015). It has been strongly correlated that lower crime rates and high social capital go hand-in-hand. In “The Physical and Social Determinants of Mortality in the 3.11 Tsunami” Aldrich measured for social variables and used crime rates as the means of measuring social capital and found that areas with lower crime rates and assumed higher social capital had relatively higher rates of survival. Inversely, areas that had higher rates of crime and assumed lower social capital had higher levels of mortality.

The author of the study also considered the relationship between each region and the ruling party of Japan. They describe these relationships as linking relationships and found that areas that had supported the Liberal Democratic Party had a higher rate of survival. Inversely, those areas that did not have known connections with the Liberal Democratic Party had higher rates of mortality. The linking relationship connected communities with more external resources than their counterparts.

Hurricane Katrina

Looking closely at how communities react to disaster beyond the hypothetical can outline the limits of social capital and the characteristics of social capital in the real world. There have been a few studies looking at the communities that were impacted by Hurricane Katrina and what factors could have lead to some communities performing better than others.

One study conducted by Elliot et al. (2010) compared the infamous Lower Ninth Ward of New Orleans and the more affluent Lakeview neighborhood. The study looked at the recovery of each neighborhood and the characteristics that might have limited the Ninth Ward as compared to Lakeview. Elliot found that the members of the Ninth Ward had fewer trans-local relationships or relationships outside of the immediate area, had fewer resources available within their relationship network, and had a smaller overall network size when compared to the Lakeview community. The scale and length of the Hurricane stretched the system and made living in both areas impossible for months. Trans-local ties became more important as individuals were displaced for extended periods of time. The ability to relocate quickly and plug into a new location was an advantage to those who were displaced.

General wealth is an obvious strength, while the lack of wealth is vulnerability. Bonding relationships, which are most common, provide the majority of the social resources available to an individual. Bonding often occurs within the same socioeconomic classes of society. Thus, those who are wealthy will often have access to more wealth within their relationship network, while those who are not wealthy do not have access.

Wealthy segments of society are also more mobile and therefore create relationships elsewhere. These linking relationships allow external resources to enter the communities.

The lower Ninth Ward was primarily composed of minority demographics, principally African Americans. As bonding occurs generally within the same ethnic groups, minority groups' networks are commonly smaller. Meanwhile, Caucasians comprise the majority of the Hurricane Katrina effected population, thus their relationship networks may include more individuals over a variety of locations. Elliot et. al. (2010) affirm the principles of resilience outlined earlier. Social capital has limits and is not the sole property of resilience. Disadvantaged groups are more vulnerable even if they possess more relationships than advantaged groups because they have less resources. Linking connections that span the wealth and race gaps that often isolate segments of the population from one another may help to reduce the limits on social capital and open up more avenues for resources to be distributed more broadly during and after disastrous events.

Chapter 2: Review of Literature

Resilience

To understand the principles of resilience, it is crucial to understand its origin. Originally resilience was applied as a mechanical engineering term describing objects that return to their original shape after being deformed. CS Holling later used resilience to describe ecological systems. CS Holling first applied resilience to ecological systems in the early 1970s. Until this point, ecological systems were observed as having an equilibrium, which implied certain stability. However, stability within the natural environment is rare and finite. Successful communities exemplified in nature must have an element of adaptability in order to address the ever-changing environment. Certain ecosystems display a wide range of adaptive capacities, which make them more likely to recover or change in the face of disaster events. This culmination of a system's ability to absorb change would become known as resilience (Holling 1978).

Holling argued that preserving and conserving environments and reducing stressors drove the system closer to collapse. Systems need to have the freedom to use their adaptive capacities because without constant adaptation, systems become more susceptible to stress. Inevitably a large-scale disaster event will occur and place tremendous stress on any given system. Without the adaptive capacity built from constant stress, a system loses its ability to recover from disaster events. Similarly, communities that do not build a resilient system with embedded adaptability are likely to fail or recover slower in the event of a large catastrophe (Holling 1978). Healthy systems need to be designed to be safe to fail, not just fail safe (Ahern 2011).

From Hollings work resilience has been applied to a broader range of fields. The principle of resilience as a reactive and adaptive capability has been applied to numerous settings including politics (Argomaniz & Lehr 2016), economics (Martin 2012), and society (Medrano 2014). Much like communities of plants and animals, human settlements display the principles of resilience and inversely principles of vulnerability. The nuances of these settings, the complexity of systems, and their relationship to each other make the principle of resilience and any subsequent definition difficult to pin down. Many definitions that exist depend on the setting and level at which they are analyzed. For example cell, individual, local, state, federal, and global. For the purposes of this paper, the definition will be limited to human settlements, specifically the city of Muncie, Indiana.

Resilience has become a large and contested topic of study as definitions and applications vary. The definition found to be the most applicable to this research study is from a comprehensive literature review conducted by Fran H. Norris et al. (2008). Norris puts forth this definition of resilience as “a process linking a set of adaptive capacities to a positive trajectory of functioning and adaptation after a disturbance” (Norris et al 2008 page 130). This paper will use this definition when referring to resilience from this point forward. Resilience is better understood as a process that a system undergoes in order to respond to a disaster, rather than an outcome of a disaster. A resilient system is a system that is able to undergo the process quickly, easily, and successfully (Norris et al. 2008).

The distinction between resistance and resilience helps to discern precisely how resilience plays out in communities. Resistance is defined as the ability of a system to avoid disaster. Resistant systems have structures in place to protect against events without incurring damage. Infrastructure such as levees, fire stations, and police stations can all be

viewed as resisters. Resistant systems work best against predicted or known threats, not unpredictable catastrophes (Longstaff 2005). In contrast, resilience is the response of the system to change via disaster and is best illustrated when systems fail. In the case of the Cajun Navy, resilience was observed as the system reacting when the pre-organized institutions did not react fast enough.

Resilient systems have the ability to pick up the slack after a failure using adaptive capacities. Adaptive capacity is the group of tools that systems employ in order to respond to stress. These include a range of economic, information, social, environmental, and community resources, which at any given point can be mobilized to react to and rebuild after disaster. These adaptive capacities are interdependent, and the collapse of one will likely not have permanent and debilitating effects on the others. An individual resiliency resource can be judged on its quality by its apparent robustness, redundancy, resourcefulness, and rapidness. This set of metrics is commonly referred to the “4R’s” of resilience and were introduced by Bruneau et al (2003).

Robustness refers to the resource’s capability to endure stress without undergoing degradation. An adaptive capacity is robust if it can withstand a wide variety of dangers, while fragility is the inverse. Determining if an adaptive capacity is fragile requires knowledge as to whether or not it is able to function exclusively under a very limited number of scenarios. Without a robust resource, a system is not able to absorb damage, and instead the resources available to individuals become unusable or unavailable.

Redundancy is defined by a resource’s suitability in the event of disaster or having several contingency plans to address one problem. If one option is eliminated there are still other viable action plans. Social networks are a prime example of redundancy, as they

display a broad range of relationships for an individual to utilize or an abundance of contingencies in case a single relationship fails. A lack of redundancy weakens the system. If a resource is eliminated without having an alternative, the system is in danger of collapse or, at the very least, is severely crippled.

Resourcefulness is the proper allocation and direction of a resource to the appropriate area. If a disaster unfolds and the resources are misallocated then the recovery of the area is weakened. Norris et al (2008) argue that this concept is not a part of all adaptive capacities but an adaptive capacity in itself. The argument being that proper allocation, i.e. decision making, needs to be robust, redundant, and rapid.

Rapidity is the mobilization of resources within an appropriate time frame. If the resource is present but is not able to be effective in a timely manner, then it is not an effective resource. In order to be considered effective, the resource must be able to be accessed and used quickly so as to avoid damage from being accrued. Resiliency is dependent on rapidity. If the adaptive capacities are not available within a short amount of time, then recovery will be slower, which can cause the system to be irreparably damaged and can be subject to further permanent damage as a result.

Norris et al (2008) divide adaptive resources into four categories: economic development, information and communication, community competence, and social capital. Each category has an ideal set of structures that lends to the resilience of a community. Community resilience is the principles of resilience as they are applied to communities at varying levels of analyses including local, state, federal, and global, etc.

Economic development must be diverse and equitable. Having diverse resources allows for other industries to pick up the slack when another fails. This is well illustrated

within the Rust Belt of the United States. Competition and market changes caused the automotive and steel industries to plummet and without another economic resource to depend on, cities floundered and degraded (Kahn 1999). Without equitable resource allocation, the poor are often the most damaged demographic of the population. Using the Rust Belt example again, the richer communities of the population were able to move to “greener pastures” while the poorer factions of society were trapped with no jobs and depreciating assets (Ganong & Shoag 2017). Cities in the rust belt lost large amounts of their population leaving behind husks of civilization where booming metropolises once existed (Hartley 2013). A resilient system has a diverse range of economic resources available and allocates resources where they are needed in an equitable fashion when disaster strikes. It allows for individuals to make adjustments and recover after disasters regardless of their socioeconomic standing.

Information and communication as a capacity is one of the more traditional frameworks for addressing disaster mitigation and prevention. In the resiliency framework, communication is both technical and social. An infrastructure that allows for a system to communicate within itself in order to coordinate a response and report deficiencies is an important element of adaptability. The Cajun Navy relied heavily on Facebook and GPS cellphone applications to gather information about stranded individuals (Morris 2016). It is possible to experience the social function of information sharing as the community derives an identity from the narrative and meaning of the disaster event. The stories that the community tells about itself and about each other create a means of community identity. This can be seen as group formulation that helps solidify cohesion and aids with recovery.

Community competence can be described as the health of the decision-making process within a community or how successfully communities go about analyzing and reacting to problems. Decision-making is collective in this context. Systems and communities are most resilient when all of the individual members are accessible. The maximum amount of knowledge and creativity that a community holds becomes more accessible and usable when more people are able to share their voice. The reality of community competence is based within the existence of trust in community decision-making. Without this the process will be more damaging than good. Individuals must believe that their voice makes a difference, and that the goals of the community are good.

Social capital is a complex principle with varying opinions regarding how applicable it is. It is key to resilience and is exhibited in communities with strong identities. With origins estimated around the turn of the century, LJ Hannifin is one of the earliest writers on the subject and described it in a way similar to its use today.

“I do not refer to real estate, or to personal property or to cold cash, but rather to that in life which tends to make these tangible substances count for most in the daily lives of people, namely, goodwill, fellowship, mutual sympathy and social intercourse among a group of individuals and families who make up a social unit... If he may come into contact with his neighbor, and they with other neighbors, there will be an accumulation of social capital, which may immediately satisfy his social needs and which may bear a social potentiality sufficient to the substantial improvement of living conditions in the whole community. The community as a whole will benefit by the cooperation of all its parts, while the individual will find in

his associations the advantages of the help, the sympathy, and the fellowship of his neighbors” (1916 Page 130-131).

Here, Hannifin encapsulates the idea of social capital as relational and social systems that generate mutually beneficial interactions between participants. These inter-organizational networks are categorized by reciprocal links, frequent positive or supportive interaction, network overlap, capacity to form new associations, and cooperative decision-making process (Goodman et al. 1998).

Social capital exists as a network of relationships. These relationships vary in strength and value. A person can be seen as the center of a web with relationships being drawn between those individuals they know. The web stretches across the community and into other communities. Connections built upon other connections permeate the web. Redundancy in relationship pathways allows for resource chains to be maintained in the event that a relationship is no longer accessible. (Longstaff 2005)

Social capital is currently being used as a recommended way to build resilience in communities by the federal government. These systems allow for greater connectivity in communities, allowing for better access to information and resources by community members, decision makers, and relief workers (U.S. DHHS 2015). Communities that do not have significant social networks or the social capital that results from those networks are likely less resilient than their more social counterparts (Aldrich 2012).

Typically, social capital is divided into three sub categories: bonding, bridging, and linking (Baum & Ziersh 2003). These types of social relationships embody varying characteristics of the resources. Bonding relationships are close, typically familial, and generally exist between people who are of the same background, status, information, or

class. Bridging social capital is associated with loose connections that go beyond race and class boundaries. These relationships are more likely to show diversity in information and resources. Linking capital connects citizens to those in power, while linking relationships allows citizens to be advocated for and represented in the decision-making process (Szreter 2002). Social capital is built upon the ability for people to trust one another. Each type of social capital relies on varying levels and types of trust.

Trust, Reciprocity and Social Capital:

Often social capital is relayed in tandem with principles of trust and reciprocity. This framework views relationships as an exchange of goods and favors. Each participant provides services and goods to each other while trusting, understanding, or believing that the other will reciprocate.

Having total knowledge of an individual and, as a result, the outcome of an exchange with those individuals does not constitute trust, as the outcomes are known beyond a doubt. The existence of a situation where the entirety of the variable is known so much so that the outcomes are certain, is rare if not impossible (Simmel 1978). Instead, interactions are riddled with numerous unforeseeable possibilities.

It is often extremely difficult to make decisions using all of the available facts. Doing so would mean constantly double-checking every interaction and having to run through all of the possible outcomes. "... The only alternatives to appropriate trust are 'chaos and paralyzing fear' "(Lewis and Weigbert 1985). The function of trust is to make it so that we can function simply in a complex world or in the "reduction of complexity" (Luhmann 1979). Trust makes normal living possible, it allows for a level of risk assessment that can

avoid the most foreseeable disaster, but shortens the process in order to maintain productivity.

Having positive identifiers that pertain to individuals allows for people to make assumptions about another person in order to be able to trust him enough to exchange goods. Negative identifiers also function to cause distrust. These systems are not always based in reality and thus can result in false equivalences resulting in trusting or distrusting when the opposite should be done.

Sharing an understanding of everyday experiences helps to facilitate trust as both individuals have a mutually understood framework. This helps strangers have a higher degree of trust compared with those who have no shared experiences. Trust can be shared and developed over similarities in two people's experience with the same regional food, celebration of the same traditions, or knowledge of the same geographical places. Knowing that someone shares some of the same experiences may help individuals to extrapolate data about how much they should trust another individual. "Familiarity is the precondition for trust as well as distrust, i.e., for every sort of commitment to a particular attitude towards the future" (Luhmann 1979 page 19).

Frequent interaction, how often individuals are able to see and talk to one another, can help to create familiarity. Churches and other religious institutions are strong facilitators of frequent interaction as members of the congregation typically see each other a minimum of once a week. These regular interactions build trust and with consistent interactions bring a sense of knowing. This example of a relationship has a sense of predictability based upon past interaction. Frequent interactions or an interaction history generate thick trust, which goes beyond general trust as it is based upon knowledge of an

individual, their tendencies and the likelihood of an individual reciprocating or donating favors and resources. While familiarity can result in distrust this is often based upon first hand experience. Opposite of this is distrust based on unfamiliarity and perceptions of difference or misrepresentation.

There are three dimensions of trust that arise when examining social interactions as proposed by Lewis and Weigbert (1985). The first, cognitive trust, is based upon rationality. Cognitive trust is considered with the probability of reciprocation in mind. The second is emotional trust, which is found within affection for the individual being trusted. Emotional trust is formed as a result of feelings of attachment, kinship, or a shared belief. The third form of trust is behavioral trust.

“Behaviorally, to trust is to act as if the uncertain future actions of others were indeed certain in circumstances wherein the violation of these expectations results in negative consequences for those involved. In other words, the behavioral content of trust is the undertaking of a risky course of action on the confident expectation that all persons involved in the action will act competently and dutifully” (Lewis and Weigbert 1985 page 971).

Trust is a mixture of these elements, as each interaction is made up of more or less of each character. The combination of these three dimensions helps to determine how to create trust in communities and generate more social capital. Using each dimension to solidify the next creates strong cycles of reciprocity. Systems that benefit individuals, stimulate identity, and have habitual interactions help to create cohesive and connected communities.

In order for individuals to first partake in an interaction, the action has to have some rationality. The value of the relationship, or each participant's willingness to both give and receive in the relationship, has to be measurable in order to be effective. Actions, goods, or agreement cannot be too taxing on any individual participant. The exchange must be fair and beneficial, allowing the interactions to be sustained and for trust to be reinforced and rewarded. There is a scale that allows for unfairness but it must be infrequent and minimal and preferably not early on. Once the behavioral and emotional dimensions of trust have had time to establish there can be limited unequal transactions (Lewis & Weigert 1985).

Behavioral dimension of trust is established over many interactions. The behavioral element of trust slowly reduces fear of the lack of reciprocity and results in the continual interaction even if it no longer makes sense. Driving a car has been shown to be dangerous; numerous car accidents kill people everyday. Yet, every morning millions of Americans climb into their cars and travel at high speeds next to thousands of other cars. This trust that nothing bad will happen is not rational but is predicated on the belief that since they have not gotten in a car crash yet they will not in the future.

The emotional element of trust is derived from the emotional bond between participants of the relationship. Trust has costs and benefits; betrayal of trust is associated with a strong negative emotional response. The action of breaking trust is often seen as personal as the consequence shows a disregard for the other person and is a directed intentional harm. Inversely keeping trust inspires more confidence and affection in both parties.

Social capital is built upon trust and reciprocity, which derives from a certain level of confidence. To inspire this confidence, the system must encourage frequent, meaningful

interactions; have a strong identity, and a high density of relationships. Communities that have organized an effective response to disasters develop an environment for trust to be built during those disasters (Carlin et al 2014). Designing and encouraging systems with social capital and ultimately resilience in mind would make for more sustainable, long lasting cities and lead to gains in productivity. Local food is a prime illustration of this principle. While we encourage local food systems because of the health, economic, and environmental benefits, the other benefits are not often elaborated on.

Local Food Systems and Social Capital:

Local food systems are those that condense the process of food production, processing, distribution, and consumption within a certain geographic space (USDA). Because this research is exploring the food system at the town, city, and village level, local food will be applied within those confines and the immediate area, or the county. The process is condensed, and therefore the interactions that are necessary between the farmer and the consumer are also condensed. All of these relationships must take place in a smaller vicinity. The density that results increases the relationship web and pathway redundancy. Resources are also restricted to a close area and are more accessible to the community. Heavy machinery, food production technology, and transportation equipment is all contained within the locality. Information on growing, preserving, and processing food is also contained within the locality. People interact more often with the same groups, and thus begin to create relationships with their food providers. They learn each other's names and begin to foster deep trust and reciprocity. These models of business are built

more on a mutually beneficial relationship because the shared sense of space allows for more social interaction than a purely economic interaction.

The local food model encourages shopping small and visiting with multiple food vendors. Farmer's Markets occur only during certain times of the season, week and day. It is likely that an individual will intersect with the same people at the same time with regularity. The shoppers will also interact with the same vendors, producers, and farmers every week. These regular personal interactions develop bonds between producing and consuming individuals. If the whole community were to take part in some form of local market or become frequent patrons of local food vendors, these organizations and institutions would become local hubs for social interactions. Local food events are already a regular staple of small communities, for example the Strawberry Festival in Daleville, Indiana, the Cranberry Festival in Warrens, Wisconsin, and the Bacon Festival in Portage, Indiana and other celebrations allow the community to rally around their local food products and their producers. These events in combination with a strong local food system become celebrations of local cuisine and the relationships born from them.

Local cuisine is an important part of local identity (Scholliers 2001). The Cajun Navy is extremely pertinent to this concept. Being Cajun is as much about food as it is about location and culture. The Cajun people share a love and pride about the fame and prestige of their food. Different regions of France are known for their wines, cheeses, and breads. Regions of Italy are known for their pastas, wines, and oils. These areas are famous for foods that are made within their borders and from ingredients produced within their borders. The ingredients themselves can be a symbol or an identity. The Hatch Chili Peppers of New Mexico are known world wide for their unique heat and flavor. Peruvian

potatoes are famous for their bright color and complex flavor, and Bolivian quinoa became so popular as a “Super food” that it caused a local crisis. What you don’t eat says just as much about you as what you do eat. In a cultural rejection of the British, Americans, in 1773, dumped tea into the Boston Harbor. This rejection and the subsequent boycott of tea in the colonies solidified coffee in the US for the remainder of its history. Tea in these cases was identified as representing British values and ideals. To consume it was to agree with or at the least be complacent about the ideals and actions of that community. Food is strongly associated with culture and history and is an important part of the identity of a place or peoples.

Food is a cultural landmark. It is as much a part of a community’s identity as the land area itself. Therefore, local food and the ingredients that comprise them should be held up as a symbol of the space and of the people that inhabit that space (Stapleton 2015). While some areas are rich in food culture, others have developed little in the ways of unique dishes or ingredients. The reasons behind this could be that the local food system was never developed enough for those identifying features to be matured. The opportunity for communities to explore creativity and share narratives through cuisine and produce is lacking in many communities. This not only deprives the world of more delicious and inventive cuisine, but also deprives communities of social bonds and place identity.

Local food helps to create a sense of identity by cultivating a shared, unique experience of regional products and regional vendors, food culture, and identity. Local food systems solidify people’s relationships around strong individual and regional identifiers. This sense of pride and place attachment helps people value the community enough to invest and aid after disaster (Perkins et al 2002)

Chapter 3: Research Methodology:

A sense of belonging and camaraderie is hard to express in unified and measurable metrics. Instead, these ideas are relayed in experiential narratives. Identity and strength of relationships are based on the perceptions of those involved. With this in mind, the methodology that has been employed in this study works to reveal how individuals see themselves and others within the local food system. Case studies and interviews will comprise the entirety of the research of this paper. The goal of this is to acquire a sense of how people who participate in Muncie's food system view themselves, their relationships in the local food system, and how these views may reflect embedded resilience.

The case studies were used to examine how the theories of resilience and social capital unfold in post disaster situations. Looking at how social capital function as an adaptive capacity in two disasters helps to contextualize the ideas outlined previously. This is important to establish the practical limitations of the concepts. By establishing the borders of the applications of resilience and social capital, the utility of these principles can be more understood and framed for policy and practice.

Interviews were conducted because this process was deemed best for the constraints of the subject matter. Qualitative research is best for instances that are not simple to quantify. Things like identity, perception, and trust and reciprocity are not readily extrapolated from demographic data. Interviews allowed for a deeper, more nuanced view of how and why people participated in the local food system and what effects it had on their relationships. Demographic data also does not distinguish between people who participate within the food system and those who do not. In cases where quantitative data would have been useful, it was not readily available and would have taken more

resources than were available to gather. Perhaps in the future it would be worthwhile to gather this type of information.

Informal interviews were conducted to ask questions about how the subjects participate in the food system and how they communicate with others in the food system. These questions are intended to obtain an understanding of how people see their place within the system. The interviews were open ended in structure and allowed the subject enough time to adequately and fully answer the questions as they saw them. Subjects were chosen on the three following conditions: the interviewee had to be a participant in Muncie's local food system; he or she needed to identify as one of the following roles: participant, producer, consumer, advocate; and finally, the participant had to be willing to be interviewed.

The local farmers market in Muncie is the center of the local food system. Here 20-30 vendors sell fresh, seasonal produce, and processed goods. The selection of food is limited when compared to larger grocery stores, but has more than enough interesting, unique, and high quality goods to attract shoppers. The farmers market is usually quite busy, with large crowds often over filling the space. In spite of this the atmosphere is quite leisurely as people go about purchasing their food. Often live music is performed adding an event like feel to the market. The most recent count placed average attendance at around 4,000 individuals a week. It was from among these individuals that the first subject was recruited.

The interviewees were found through first inquiring at the local farmers market, and then from recommendations from those interviewed in an attempt to imitate the relationship web. This snowball methodology was used in order to simulate the social

network. By relying on the last subject to acquire the next subject or, in some cases, an unavailable individual making a recommendation, the relationship network was able to be replicated. The interviews were conducted over the phone and in person and the names and affiliated locations will be redacted. Ultimately, six interviews were conducted. Every individual interviewed except one lives in Muncie, the other lives around 25 minutes outside of Muncie. The successive interviews ceased to reveal any significant new information and it was concluded that data saturation had been reached. The goal of the interviews was to closely capture how the subject sees himself or herself within the context of the local Muncie food system. The questions asked were as follows:

How long have you been participating in the Muncie local food system?

How do you see yourself within the context of the local food system in Muncie?

In what ways do you contribute to the local food system in Muncie?

In what ways do you benefit from the local food system in Muncie?

How do you communicate (in person, email, cellphone etc.) within the food system?

How many people do you think you know that participate within the food system?

What amount of the food you consume comes from local sources?

How much time per week on average do you spend interacting with other individuals within the local food community in Muncie?

What would you estimate to be the percentage of your livelihood that is generated from the local food system in Muncie?

How would you gauge the quality of the relationships that you have formed within the local food system in Muncie?

What are your predictions for the future of Muncie's local food system?

These questions were designed to capture the participants' experience in the food system and learn how heavily they depend on and contribute to the food system. Obtaining this understanding was helpful in determining what level of investment the participants had in the system and whether that affected their relationships. The interviewees were not given a textbook definition of the local food system in order for the participants to present their own biases and viewpoints on the subject. The questions were designed to learn how involved the individuals were with local food and how many relationships were present as a result. Contact methods (i.e. phone, email, in person etc.) and information were also important to note within the interview because it illustrates the communication pathways present in Muncie. Finally, the purpose of the study was also to obtain predictions of the food system on whether the participants had reason to believe that the system may falter, stagnate, or grow.

These questions revealed much about how participants in the local food system form and maintain relationships and the sorts of social capital derived from them. They could lead to more ideas about how local food affects social capital in communities and if it can help to fill in the gaps that are often found within resilience framework.

Muncie: Background and Demographics

Muncie was incorporated in 1865. Early access to railways and the discovery of natural gas in the area lead to a rapid economic and population boom (Greene 1965). The town grew by 400% from 1880 to 1900. New industrial factory jobs attracted workers and established the town as a regional center of commerce. The success of the local industrial

companies soon attracted more amenities. Ball State University was founded in 1917, with the help of the Ball Corporation and soon after IU Ball memorial Hospital in 1929 (Spurgeon 1984). Marsh, an Indiana supermarket chain, was founded in Muncie in 1931 (marsh.net 2010). Muncie was seen as the quintessential Midwestern city as its location, size, and population was thought to be good representation of Middle America. For this reason, Muncie became the setting of the Middletown Study, an ethnographic and anthropological study of the culture and trends of Muncie as representation of America (Lynd 1929). These studies would use Muncie as representation of the average small city in America. Ultimately, Muncie would come to reflect the rise and fall of the Rust Belt region.

By the early 1900s the natural gas and oil deposits around Indiana were mostly depleted. The effects of the gas bust would not be felt in Muncie for another 60 years, as energy costs were still cheap. The combination of changing industrial trends and the increase of energy costs would cause factories to close or move from the mid 1960's continuing forward into the twenty-first century. Thousands of jobs were lost over the span of 50 years. Muncie's population stalled and has been facing a steady decline, shrinking 10% in the last 30 years. A driving force in the decline of Muncie's population was and is the lack of employment opportunities in the city. Without the factories that once filled the town, there are not enough steady jobs to provide a livable wage for blue-collar workers. This becomes clear when the median incomes and poverty levels are examined. The median income in Muncie is \$31,373 compared to the national median income of \$57,617 (US Census 2016). The poverty rate in Muncie is more than double that of the rest of the United States at 30.9% compared to 14% (US Census 2016). These

statistics come as a result of the decline of industry and no new economic generator to fill its place.

In late 2017 the Indiana grocery store Marsh, which was founded in Muncie, closed (Roysdon, K 2017), Muncie lost three supermarket locations, two of which have been scheduled to be renovated into new grocery stores while one remains vacant. The one that will remain closed is located in a traditionally low-income area and was the only grocery store within walking distance for many who cannot otherwise easily reach fresh food. While many new and exciting solutions are being explored with multiple vendors including mobile markets and other such solutions, for many the problem still remains.

Chapter 4: Discussion of Findings

Findings and Discussion:

After analyzing the responses to the local food system in Muncie, a narrative begins to take shape. The subjects each exhibited strong signs of social capital and communicated that the relationships they formed through the local food system were not only numerous, but spread throughout the community. These relationships displayed a high level of trust in reciprocity that was bolstered by meaningful and regular interaction. Similarly, the relationship networks showed a robust, efficient capacity to respond to disaster. The interviews reflected a local food system that not only produces food, but also helps support community resilience. Subjects will be referred to using aliases.

Relationship networks:

A key element in social capital is the presence of relationships. These relationships should present individuals with a wide network of resources that span throughout the community. Based upon their responses, the interviewees described the Muncie local food system as an excellent relationship generator. Every individual's response showed the presence of a myriad of relationships in the local food system. The low estimate of food related relationships that interviewees claimed was 25, while a local community organizer approximated her relationships was around 600. Examples of these relationships could be of a close friendly nature or more formal, for instance an acquaintance or work relationship. Regardless of the nature of these relationships, they show evidence of further

connection to the greater community. These numbers line up with traditional social capital infrastructure systems such as churches, schools, and neighborhoods.

Local food system relationships are often built around physical spaces. For the majority of respondents, these spaces were the farmers market at Minnetrista, a local museum and garden in Muncie, and a small local organic grocer. These spaces primarily host the interactions that form the relationships within Muncie's local food system. The character of these interactions, especially the farmers' market, may provide a mechanism for an increased number of relationships and higher trust and reciprocity.

By reducing the time of availability of produce into a few hours one day a week, it is more likely that individuals will interact more frequently as the window of time to access local food is greatly narrowed compared to conventional grocers. Individuals may even be able to guess more reliably when another person may be at the farmers market based upon previous weeks. This structure enables people to repeatedly interact, increasing the odds that they will eventually get to know one another and form some sort of relationship whether as friends or acquaintances.

It became apparent when listening to those that participated that a large portion of participants know each other or know of one another. All subjects reported that they attend the farmers market regularly during the summer months. Some of the subjects vend at the farmers market, and it is almost certain that they have all seen one another if not interacted.

One subject, Margaret, has been participating in the food system for ten years. During her time she has taken on the role of consumer, researcher, and organizer. Margaret feels that she has benefited in multiple ways by participating in the local food system. She is

provided with healthy, delicious food and is also a part of a growing community. She enjoys the network of relationships that she has formed during her time talking and engaging with people in the local food system. Margaret spends a large portion of her time working in the food system. She spends anywhere from 10 to 20 hours a week interacting with various individuals and groups. This amount of time has allowed her to accrue hundreds of relationships. She provides a link between individuals who may not know one another.

Another subject, pseudonym Will, participates in more of an advocacy role. The communal aspect is a significant driver in Will's desire to participate in the local food system. He is involved in local organizations where he is able to interact with people in order to communicate about local issues and potential solutions that might be available. Will stated that most of his interactions happen in-person at public forums, while gardening, or on Facebook. The relationships formed during these interactions are strong and healthy. They are also reinforced with regular interaction, whether at local meetings, through time at the community garden, or at the farmers market.

Ally, a local consumer, said that the social relationships she has formed from her time in the food system spread throughout the community. Ally has stated that she cannot go anywhere without knowing someone through her experiences in the local food system and that some of her current close relationships are a result of her time participating in the local food system. As someone who has previously worked in the food system, she has continued to take those relationships with her as she moved into a consumer role. She stated that she is in touch with over a dozen people within an hour as a result of her time spent in the food system. While this reveals certain interconnectedness in the Muncie local

food system, it also hints at its size. Being one step removed from almost all participants in the local food system means that the food system is likely not very large.

The local food system is not limited by its structure, but rather its size. Although the structure lends itself well for relationship generation, the portion of the community that participates seems relatively small. Encouraging participation by increasing the capacity of the farmers market, incentivizing growers to sell and consumers to shop at the farmers market, and advertising the times and products available would assist in shoring up this limitation. Even now, the Muncie local food system produces a large amount of relationships and connects people across the community. Growing the local food system to include more people would help to produce more relationships and connect the community even further.

A key element of social capital is raw relationships; this is to say the net number of relationships regardless of their underlining characteristics. Beyond this the varying levels of a relationship include trust and reciprocity as well as the relationship's bonding, bridging, and linking elements that greatly affect resilience resulting from social capital. Now that local food system has been shown to be a good relationship generator, the qualities of those relationships must be examined.

Bridging Relationships:

The quality of a relationship can be addressed in several ways in regards to social capital. One metric for distinguishing the resilience of relationships is whether these relationships connect sub-communities within the larger community as a whole. These relationships can be described as bridging relationships. They transcend race, class, and

family. Essentially these relationships are important for distributing resources, especially from those who have to those who have not. The potential for the food system to create bridging relationships appears high. Everyone needs food regardless of income, or race. Bringing people together based on shared needs and beliefs helps to emphasize similarities and create trust and reciprocity across community groups.

Samantha, a local business owner, helps to tie different groups together. Her business is centered on providing products that cater to a specific dietary model. This model is restrictive, especially in the Midwest, and often does not have the same availability of products. By providing those products, she feels that she adds to the food diversity in Muncie and helps to make the lives of the people she serves better. She feels that by providing this service she is helping Muncie and in turn making the city a better place for her to live. Since she is the first to offer this sort of service within Muncie, she is also able to establish herself as the dietary lifestyle becomes more prevalent in society. With increased interest in the general population, Samantha's business helps connect more people to local food. Along with this, Samantha is able to use her business as a route for advocacy for more responsible consuming and helps to facilitate conversations within the dietary group she serves and within the broader food community in general. Businesses such as Samantha's help to bridge local food with other related interests.

While there was no mention of income and racial relationships within my research questions, there are some fundamental elements within the responses of the subjects that allude to the potential for a more conscious effort towards bridging relationships. One of the subjects mentioned how many of her relationships exhibit redundancy saying, "If I don't know someone, I know someone who knows someone". She stated that she is friends

and acquaintances with many people who are also friends and acquaintances with each other. The subject expressed an idea that these relationships reach out into and across the community as a whole. She stated that this was “the original social network”. While the implications of this are not explicit, they do present an underlying possibility for more bridging relationships within the local food system. These networked relationships can extend into a diversity of sub communities. Will, works in community gardens in the south of Muncie. South Muncie is a lower income area, by participating in gardens in south Muncie and interacting with patrons at the farmers market in north Muncie Will has a potential to facilitate bridging relationships.

These sorts of relationships could be greatly encouraged in Muncie by making the farmers market more physically and financially accessible. Whatever barriers to entry that may exist within the local food community, whether financial, social, or physical could be greatly reduced and opened up to more of the population through education and consistent advertising. Encouraging a variety of activities and products may also help to open up the experience of the market to better include varying populations within the community. This would greatly increase the value of the local food system in its resiliency applications.

Trust and Reciprocity:

Trust and reciprocity are integral for building social capital and relationships and without these components relationships become impossible. Trust enables the decision making process to be greatly expedited. In order to be considered a strong generator of social capital and resilience, the local food system must show a propensity for creating

trust and reciprocity. The interactions must exhibit the three types or components of trust: cognitive, behavioral, and emotional.

Cognitive or rational trust is the foundation for trust. The interaction has to carry worth for both parties. If the cost of an interaction is skewed towards a single participant too greatly for too long, the relationship can be considered abusive and is likely to result in its demise. Thus relationships must be beneficial for both parties. A healthy local food system exhibits rational and balanced interactions. In the case of Muncie's farmers' market, the rational idea is that the farmer wants to sell their products. In an attempt to create a healthy system, the producer will not charge too high and risk deterring sales. Similarly, producers cannot price too low because they will not make enough for their livelihood. Thus, the price that consumers purchase the produce at is probably reasonable. In the same token, the produce is probably at a fair cost for the quality. If quality decreases, the farmer would quickly lose patrons. The farmers market has on average 4,000 visitors per weekend according to counts conducted by Minnetrista. This number has been steadily growing over the past number of years. This growth can probably be attributed to a renewed interest in local food, but it can also be seen as a sign of building trust. More and more people are spending their money at the farmers' market, exhibiting trust in the products being offered.

The respondents all expressed a belief that the food they purchased at the local farmers market was of a good quality. They expressed a belief that the food they purchased was not only healthier, but also sustainably produced. These purchasing decisions were made with the belief that their decision to shop at the farmers' market was not only better for their dietary health, but also supported best management practices for the health of the

environment. These values rationalize the decisions to shop at the farmers' market instead of solely at larger traditional grocery stores. This rational interaction between consumer and producer is the bases for the initial interactions in market setting. Continuing interactions must be consistently rational.

Within a community garden setting, a group has come together believing that each individual wants to garden and will do their share to maintain the space. They either do not have the resources, space, or desire to garden at home and have instead decided to participate in a garden as a group. Here they can gather knowledge, physical resources, and the assistance of other participants. The garden can also act as a social venue, where individuals fulfill the need for interaction. Community gardens will not be sustained if the labor and rewards are not allocated responsibly. Fair and just exchanges of work and reward have to be present in order to cultivate a successful garden. Chronic mistreatment and one-sided interactions will not breed trust and reciprocity and will ultimately lead to abuse or termination. Strong, sustained community gardens are based within rational exchanges of goods and services. Underlying is a belief in community ownership. This belief helps to rationally counterweigh the instances of mistreatment by offering a different good. This good is not physical, but is instead an outcome. This means that individuals are willing to put up with imbalances because they believe that those costs are worth the outcomes that may not be strictly related to food. One subject, Will, believes that community gardens are a step towards community ownership of food. Other subjects believe ownership can come from local businesses helping to bring food into the local economy. They believe that ownership is important for the health of the community and

ultimately for themselves. This value adds another rational dimension to the interactions, which allows for a more subtle exchange of goods and services.

Overall the local food system is a rational exchange. This rational exchange allows for people to feel comfortable participating in it, believing that they will not be harmed nor treated unfairly while doing so. This belief creates the conditions for behavioral trust to be established. Behavioral trust is developed through heavy repetition by creating a predictable routine. The farmers' market and community gardens do a good job of creating behavioral trust when they are in season. However, since these events can only occur part of the year, there is a break in interaction. This break may be inconsequential, but it does limit the impact of the week-to-week routines that characterize behavioral trust. Habits underpin behavioral trust and breaking up a habit weakens it. The loss of momentum that the farmers' market experiences is nearly unavoidable. However, as farming technologies continue to improve, this issue will continue to shrink and the capacity of the farmers market will be increased.

Finally, emotional trust is created by close affectionate relationships. These relationships have strong identities that create deep bonds. Close emotional and affectionate ties built not only by cognitive, rational exchanges, but also by deep ideological views underline these bonds. These views bond people beyond rational interactions. The emotional investment that underlies these interactions has to do with intent, namely whether a person is behaving in a way that values the other equally, if not more than they value themselves. When broken this emotional bond has a response beyond rationality. Often the feelings of betrayal can be lasting and damaging to both parties. This pressure to maintain amicable and friendly relationships motivates the parties to behave fairly.

The local food system of Muncie clearly shows an emotional level of trust. The groups show a willingness to invest in one another based upon shared value structures. These value structures may have rational structures in place, but they are not necessarily cognitive. Instead they are bolstered by a deep sense of right and wrong. Each subject interviewed reflected an ethos that motivated him or her to participate in the local food system. These included desires to help the less fortunate, to support their communities, to improve the environment, to respect their bodies, to ensure ethical production, and to build ownership. There is a sense of obligation that each participant exhibited, an obligation to the community around them. This obligation strengthens their relationships and reinforces their participation.

Hannah, another interviewee, is an ardent supporter of the ideology behind supporting local food systems and local economies. She believes she is able to make more of a direct impact by spending locally and is able to show support for local entrepreneurs. Through these decisions Hannah believes that she is supporting more ethical commerce and is able to get to know her producers and distributors. She has been able to develop a trusting relationship with local food professionals and has faith that they will make choices that are ethically and environmentally sound when choosing the methods and products they employ. Because of this, Hannah is able to be confident that the food she receives from these vendors is not only local, but also healthy, environmentally friendly, and of a higher quality. This makes any inconvenience of limitation worth it for Hannah. She trusts that the time and money she has invested in the local food system has been reciprocated with food that appeases her conscience.

The presence of trust and reciprocity is well summed up with a story that one subject told during the interviews. This person is a local vegetable farmer who vends at the farmers market. She also distributes through a community shared agriculture program (CSA) in a town near Muncie. The farmer told a story about a situation she had faced a few years ago when her crops had been contaminated through unforeseen circumstances and she decided that the crops could not be sold ethically because of her convictions. When the farmer told her CSA members of this, many continued to support the farmer. Many people who buy from this farmer place a high value on the purity of the produce grown by this subject, so when they continued to purchase produce that may have had some minute residual contamination, this signaled a loyalty and dedication to the farmer. This loyalty was not built overnight and was not created accidentally. Instead it was cultivated over seasons of patronage. These deep relationships of trusts helped to support the farmer and reduce the impact of the event and limit the time it took to get to pre-disaster productivity. The resilience exemplified in the embedded social networks of this farmer and in Muncie's local food system is apparent.

The 4 R's of the local food system:

Resilience, as mentioned earlier, is determined by the health of the adaptive capacities present in the community. The particular effectiveness of a given adaptive capacity can be determined by looking at the "Four R's of Resilience". Robustness, Redundancy, Resourcefulness, and Rapidness are the metrics for measuring the effectiveness of adaptive capacities to overcome disaster. The focus of this research was to determine the presence of social capital in the local food system. However, there is some

level of indication within the subjects' responses that can help to illuminate the current resilience attributes present in the social capital of the local food system.

The robustness of the social capital present in the Muncie local food system is not readily measurable through the research done. Robustness relates to the ability for the resource to resist degradation. The nature of social capital is that it increases during times of stress; communities often come together stronger in times of disaster than in times of plenty. The social capital present in the local food system is widespread and taps into many of the relationships throughout the community. This system is based upon the investment displayed by those interviewed and appears to be strong and may not face degradation.

Redundancy is exhibited by multiple contingencies that the resource can access. In the case of social capital, redundancy can be described as multiple relationships linking one individual to another or one individual to another resource. These relationships require multiple individuals interacting and intersecting across multiple relationships through the whole of the relationships web. The Muncie local food system's relationship web is immense. Each individual interviewed displayed, as previously noted, a large relationship network as a result of participation. These relationships are redundant within the individuals network and in the network as a whole. The pathways within social capital are profuse and offer many alternatives if one path is unavailable. The connectivity displayed within the local food system through the myriad of mediums in which individuals communicate allow for the redundancy in the relationship itself. Facebook, email, cellphones, and in person interactions were regularly used to describe how individuals

interact. The multiplicity of communication methods allows for the system to offer back ups when one mode is shutdown.

Resourcefulness allows for the resources provided by adaptive capacity to be applied where they are most needed. In the case of this research, resourcefulness was not necessarily covered; however, one anecdote illustrated the efficiency of the local food system. One farmer I spoke to donates the extra produce she does not sell to local food pantries. The limiting of waste could illustrate how effective the social networks are at reducing waste and allocating abundant resources to those in need. Even though this is not being applied in a community disaster setting, it is being applied to individual hardship. Excess food is being used to temper the hardships that individual's may be facing in the Muncie communities. Social capital may be used to communicate need and through those relationships direct resources to those in need.

Rapidness is the speed at which adaptive capacities can be mobilized. Rapidness is hugely important to the effectiveness of an adaptive capacity. With this being said, the interview questions that were employed did very little to address this component. Rapidness can be inferred through the ease with which others can communicate between themselves. In this regard, the modes again play a large role. As long as the infrastructure is maintained, individuals may communicate instantly through phone, email, and social media. This ease by which individuals can communicate greatly decreases the time necessary for the adaptive capacity to mobilize. Having a physical space that the food system is organized around or multiple spaces, such as the farmers market, local grocer, and community gardens, allows for people to go to those places in order to mobilize the relationships formed within the food system. Without these spaces, individuals would have

to track down people without knowing exactly where they might be, thus prolonging the time to mobilization.

Although the 4 R's were not directly addressed in the research conducted, they still can be adequately applied through the information presented by the subjects interviewed. The application of the 4 R's would be better understood and more concretely established as being present in the social capital of the local food system if studied more forthrightly.

Chapter 5: Conclusions and Recommendations

for Enhancing Social Capital through a Local Food System

If communities want to survive disasters and recover more quickly, resilience must be considered. In order to encourage resilience, communities must promote systems that are robust, redundant, and rapid as well as provide as many adaptive capacities as possible. The local food system fulfills this role and promotes economic aims by creating and retaining wealth streams to local business owners and creating secondary jobs through preparation and processing. The local food system encourages information and communication by holding the knowledge and process of food growth and preparation within the community and by creating hubs for information sharing in the form of markets and online groups. Community competence is improved through popular local distribution models such as cooperatives and Community Supported Agriculture (CSA) groups. Finally, social capital is built by sustained and regular interactions between participants of varying roles.

Local food seems to be an excellent generator of social capital. The inherent structures, small scale, and frequent interactions all lend themselves to creating meaningful relationships centered on a shared investment in the local community and enjoyment of local food and its benefits. With this increased social capital comes an increase of resilience in the local community. Broad, redundant social networks allow for resources and information to move across the community nearly seamlessly and encourage group organization and advocacy. The ability of the community to leverage resources available to it during times of disaster in a quick and seamless manner is imperative for community survival.

If communities are interested in facilitating a more resilience-based framework of disaster preparedness, the local food system is a good place to start. By incentivizing participation, local governments could greatly increase the effects that the local food system has on their communities. Many communities are currently using programs such as double up reward bucks that multiply the snap benefits value when used at a farmers market to make markets more equitable for lower income residents as well as providing more income to local farmers. With these programs, local food can create more bridging connections and develop avenues that span the wealth gaps prevalent in the United States. This can be accomplished by facilitating more overlap between wealth groups, ultimately making lower income communities more secure and disasters less impactful to the community as a whole.

Local food is about so much more than providing delicious, healthy, and ethically raised nourishment. It is a social institution at its core. At its best, local food unifies all parts of a community and plays a large role in the identity of a place. By encouraging local food communities to invest in themselves economically, culturally, and socially, they are able to generate and capture resources to secure their future. Food is necessary for survival regardless, of age, race, gender or wealth. By encouraging local food, local governments are encouraging relationships that span throughout their community. These relationships direct help where necessary in time of need.

While Muncie's food system is small, the relationships that are present seem to possess real value. They fulfill the criteria necessary for resilience and spread across sub communities. The local food system is only limited by its size. When considered within the perspective of the broader community, the local food system only makes up a small portion

of the population. By encouraging more participation through incentivizing, streamlining participation, and increasing awareness, Muncie can begin to grow its local food system, social capital, and resilience.

Resilient communities do not allow institutions to be limited to one type of resource, but instead they recognize the different levels of values that the institutions offer to the community. They are able to establish and promote institutions that create connections and retain resources within the area. By doing so, they are able to access and distribute those resources when disaster strikes so that recovery can happen sooner.

Final Thoughts:

The local Muncie food system is a complex and integral system to the community and there is much more that can be learned by studying it. A comparative study would help to establish if the local food system is a better generator of social capital and resilience than a nationalized or regionalized food system. Comparing the number of relationships and quality of relationships would help to establish whether the indicators shown in the local food system in this research are significant when compared to conventional food systems. That being said, the research conducted in this paper is merely a glimpse of what can be learned about resilience in Muncie. As conceptualizations of society, communities, and individuals change, so will the roles that social institutions like the food system fulfill. With the future likely becoming more unpredictable as the climate and natural world begin to drastically change, communities will need to further examine how they are organized and more intently focus on being effective and resilient. Additional research is necessary to

fully capture the nuances and complexities of resilience, and social capital. It is anticipated that this paper will be useful in creating a more robust resilience framework.

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